

Unpublished tests in a wind tunnel (Mach = 1.4 and 2) have shown that counterflow helium blowing at a nose tip reduces shock intensity. Even a very small helium mass flow can change shock shape and thus decrease aircraft sonic boom.

In addition, drag reduction is also concerned : Wave drag is reduced by shock attenuation and friction drag should be reduced too, since a thin helium "glove" surrounds the supersonic body (no drag measurements performed up to now). As sonic boom can be significantly reduced by other means (shape optimization, for instance), helium counterflow could supplement those other means to finally achieve the difficult goal of sonic boom acceptance, especially for large aircraft.